

## CLAIMS

What is claimed is:

1        1. A method of limiting propagation of requests for a file comprising:  
2            sharing index information associated with the file from a first network node  
3            to a second network node in a peer to peer system;  
4            updating a distance counter in the index information by the second  
5            network node; and  
6            setting a request propagation limit in a request packet for requesting the  
7            file by the second network node to the distance counter.

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1        2. The method of claim 1, wherein the distance counter represents a  
2            maximum number of hops between network nodes from a creator of the file to a  
3            requester of the file within the peer to peer system.

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1        3. The method of claim 1, further comprising sharing the index  
2            information from the second network node to a third network node, updating the  
3            distance counter by the third network node, and setting the request propagation  
4            limit by the third network node.

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1        4. The method of claim 1, further comprising receiving the request packet  
2            by a network node and forwarding the request packet to another network node  
3            only when the request propagation limit is not reached.

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1        5. The method of claim 1, further comprising creating the file and creating  
2            the index information by a single network node.

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1        6. The method of claim 5, further comprising assigning a globally unique  
2            identifier to the file by the first network node.

1        7. The method of claim 1, wherein the index information is shared  
2    between the first network node and the second network node only when a user  
3    operating the first network node has a social connection to a user operating the  
4    second network node.

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1        8. An article comprising: a storage medium having a plurality of machine  
2    readable instructions, wherein when the instructions are executed by a  
3    processor, the instructions provide for limiting propagation of requests for a file  
4    by sharing index information associated with the file from a first network node to  
5    a second network node in a peer to peer system; updating a distance counter in  
6    the index information by the second network node; and setting a request  
7    propagation limit in a request packet for requesting the file by the second  
8    network node to the distance counter.

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1        9. The article of claim 8, wherein the distance counter represents a  
2    maximum number of hops between network nodes from a creator of the file to a  
3    requester of the file within the peer to peer system.

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1        10. The article of claim 8, further comprising instructions for sharing the  
2    index information from the second network node to a third network node,  
3    updating the distance counter by the third network node, and setting the request  
4    propagation limit by the third network node.

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1        11. The article of claim 8, further comprising instructions for receiving the  
2    request packet by a network node and forwarding the request packet to another  
3    network node only when the request propagation limit is not reached.

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1        12. The article of claim 8, further comprising instructions for creating the  
2    file and creating the index information by a single network node.

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1        13. The article of claim 12, further comprising instructions for assigning a  
2        globally unique identifier to the file by the first network node.

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1        14. A method of operating a plurality of network nodes to limit  
2        propagation of requests for a file in a peer to peer system comprising:  
3                creating a file and assigning a globally unique identifier to the file by a first  
4        network node;

5                sharing index information associated with the file by the first network node  
6        with a second network node in the peer to peer system;

7                updating a distance counter in the index information by the second  
8        network node to denote the sharing of the index information;

9                setting a request propagation limit in a request packet for requesting the  
10      file by the second network node to the distance counter; and

11                forwarding the request packet to another network node only when a  
12      propagation counter for the request packet does not exceed the request  
13      propagation limit.

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1        15. The method of claim 14, further comprising updating the propagation  
2        counter when a network node forwards the request packet to another network  
3        node.

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1        16. The method of claim 14, further comprising sending the requested file  
2        to the second network node.

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1        17. The method of claim 14, further comprising repeating the sharing and  
2        updating steps for a plurality of network nodes.

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1        18. The method of claim 14, wherein sharing the index information  
2        comprises sharing the index information only among network nodes operated by  
3        users with a social connection to each other.

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1        19. The method of claim 14, further comprising encrypting the index  
2 information prior to sharing the index information.

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1        20. An article comprising: a storage medium having a plurality of machine  
2 readable instructions, wherein when the instructions are executed by a  
3 processor, the instructions provide for operating a plurality of network nodes to  
4 limit propagation of requests for a file in a peer to peer system by creating a file  
5 and assigning a globally unique identifier to the file by a first network node;  
6 sharing index information associated with the file by the first network node with a  
7 second network node in the peer to peer system; updating a distance counter in  
8 the index information by the second network node to denote the sharing of the  
9 index information; setting a request propagation limit in a request packet for  
10 requesting the file by the second network node to the distance counter; and  
11 forwarding the request packet to another network node only when a propagation  
12 counter for the request packet does not exceed the request propagation limit.

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1        21. The article of claim 20, further comprising instructions for updating  
2 the propagation counter when a network node forwards the request packet to  
3 another network node.

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1        22. The article of claim 20, further comprising instructions for sending the  
2 requested file to the second network node.

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1        23. The article of claim 20, further comprising instructions for repeating  
2 the sharing and updating steps for a plurality of network nodes.

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1        24. The article of claim 20, wherein instructions for sharing the index  
2 information comprises instructions for sharing the index information only among  
3 network nodes operated by users with a social connection to each other.

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1        25. The article of claim 20, further comprising instructions for encrypting  
2 the index information prior to sharing the index information.

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1        26. A peer to peer file sharing system comprising:  
2        a plurality of network nodes, wherein each network node creates files and  
3        assigns a globally unique identifier to each created file, shares index information  
4        associated with each of the created files with other network nodes, updates a  
5        distance counter in the index information to denote sharing of the index  
6        information, sets a request propagation limit in a request packet for requesting a  
7        file to the distance counter; and forwards the request packet to another network  
8        node only when the request propagation limit is not reached.

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1        27. The peer to peer system of claim 26, wherein the files store at least  
2 one of digital photographs, digital videos, digital audio data, image data, or text  
3 data.

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1        28. The peer to peer system of claim 26, wherein the network nodes of  
2 the peer to peer system are operated by users having a social connection.

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1        29. The peer to peer system of claim 26, wherein the distance counter  
2 represents a maximum number of hops between network nodes from a creator  
3 of a file to a requester of the file within the peer to peer system.

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1        30. The peer to peer system of claim 26, wherein only one network node  
2 creates a selected file and creates index information for the selected file.